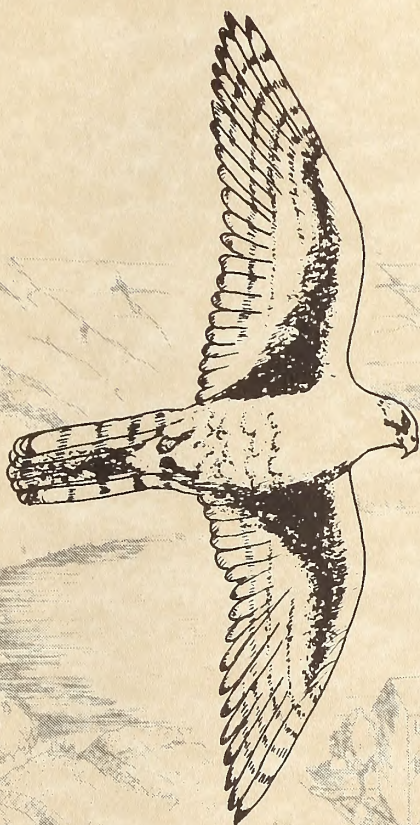




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EXECUTIVE SUMMARY



BUREAU OF LAND
MANAGEMENT
JUL 24 4 01 PM '85
PLATE RIVER RESOURCE AREA

A COOPERATIVE STUDY Idaho Power Company Bureau of Land Management Pacific Gas and Electric Company

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1986

SNAKE RIVER



HYDRO POWER

IDAHO POWER COMPANY

BOX 70 • BOISE, IDAHO 83707

July 21, 1986

Celia Solodare
110 S Wolcott, Room 111
Casper, WY 82601

Dear Ms Solodare:

Please find enclosed for your information and use a copy of the 1985 annual report for an ongoing study of construction impacts on breeding prairie falcons. As you may recall, you requested a copy last February at the Edison Electric Institute/Bureau of Land Management short course held in Phoenix, Arizona.

The study is expected to continue through 1987. Upon its completion a final report and several technical papers are anticipated.

I have taken the liberty of adding your name to a mailing list for upcoming reports. I hope you find the study of interest.

If you are interested in information concerning raptor electrocutions you may obtain a copy of "Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1981", by writing:

Raptor Research Institute
c/o Department of Veterinary Biology
University of Minnesota
St Paul, MN 55101

Sincerely,

Allan R. Ansell

Allan R Ansell
Environmental Studies
Coordinator

BUREAU OF LAND
MANAGEMENT
JUL 24 4 01 PM '86
PLATE RIVER RESOURCE AREA

ARA:lf

Enclosure (Annual Report)

BEHAVIOR AND PRODUCTIVITY OF NESTING PRAIRIE FALCONS
IN RELATION TO CONSTRUCTION AT SWAN FALLS DAM
AND EXPERIMENTAL BLASTING

Anthonie M.A. Holthuijzen

Idaho Power Co.

P.O. Box 70

Boise, Idaho 83707

Executive Summary

This report summarizes preliminary results of investigations during the 1985 nesting season sponsored jointly by the Idaho Power Company, the Bureau of Land Management and the Pacific Gas and Electric Company to evaluate the potential effects of construction activities at the Swan Falls Dam hydroelectric power plant located in the Snake River Birds of Prey Area (BOPA) and experimental blasting in the Reynolds Creek area on nesting prairie falcons. The study has 3 specific objectives: (1) to determine the effects of construction and recreational activities on the behavior and productivity of nesting prairie falcons, (2) to determine the effects of experimental blasting at Reynolds Creek on the behavior and productivity of nesting prairie falcons, and (3) to establish a data base from which raptor management recommendations can be developed for industries and government agencies.

The main thrust of the study, as in the 1984 breeding season, involved detailed, continuous observations on the behavior of nesting prairie falcons. In 1985 observations were made (a) near Swan Falls Dam, (b) in an area heavily used by visitors (Dedication Overlook), (c) in a control area, where minimal disturbance took place, and (d) at Reynolds Creek, located in the Owyhee Mountains, outside the BOPA, where experimental blasting was conducted. In each study location 4 prairie falcon nest sites were selected for observations. The observations of adult falcons started in March when the birds had selected their aeries, and continued

through brood-rearing until the chicks were 35 days of age (mid- to late June). A total of 3087 hours of behavioral observations were made on all 16 pairs combined. The number of chicks produced per nesting territory was estimated by ground surveys for all nesting territories in all 4 study locations.

Prairie falcons re-occupied 3 traditional nesting territories near Swan Falls Dam. The aeries were located 40-60 m above the Swan Falls access road. Two traditional nesting territories in the construction area remained vacant. Vacancy rate of nesting territories along the Swan Falls access road in 1985 was higher than vacancy rates recorded over the period 1976-1978. In the recreational study location 7 of 8 nesting territories which were occupied every year from 1976-1978 were used in 1985.

Three disturbance related variables were quantified: (1) sound levels (in decibels), (2) traffic flows (number of vehicles passing traffic counters), and (3) number of people, their activity and location.

Sound levels were highest along the Swan Falls access road (49.6 dB), followed by sound levels around the Dam site (47.1 dB) and the area heavily used by visitors (47.0 dB). Sound levels were not significantly different among these areas and remained relatively constant over time. Traffic flows in the Swan Falls area increased approximately 2.4 fold compared to the same period in 1984. The total number of people entering the Swan Falls area over the period March through June was estimated at

24,000; this number was reduced to approximately 8,000, when resident and construction traffic was excluded.

Two disturbance variables, traffic flows, and number of people weighted by their activity, were evaluated for their effects on the behavior of adult prairie falcons. Factor analysis showed no associations between disturbance and behavioral variables. Behaviors of adult falcons among the 4 study areas did not show substantial differences. Falcons exposed to blasting showed: (1) a short instantaneous reaction to blasting, on the average less than 2 min, and (2) no substantial differences in their behaviors compared to falcon pairs not exposed to blasting.

Productivity was similar for all 4 study locations (on the average 3.0, 4.0, 3.5, and 3.3 chicks per nest site in the construction, recreation, control and blasting study locations, respectively). One pair in the construction area failed, but this may have been due to natural causes (predation), rather than to human disturbance.

Behavior and productivity of nesting prairie falcons were not affected by construction, recreational activities, or experimental blasting. However, construction activities in the Swan Falls area did not start until mid-May with the delivery of equipment; heavy construction did not take place until early June. Thus, little or no construction activity took place until approximately four-fifths through the nesting season.

Future research efforts in the Swan Falls area will continue to monitor: (1) the behavior and productivity of nesting prairie falcons exposed to construction activities, and (2) the possible effects of recreational activities on nesting prairie falcons. Increased recreational use of the Swan Falls area is likely to be a major source of potential disturbance to breeding raptors in future years. Blasting will be discontinued at the Reynolds Creek area, but occupancy and productivity of nesting territories will be monitored for at least 2 more nesting seasons to detect any long-term effects on the falcon population.

Technical Articles Completed in 1984-1986 Based on the Prairie Falcon Study

Journal Articles

Holthuijzen, A.M.A., P.A. Duley, J.C. Hagar, S.A. Smith, and K.N. Wood. 1985. Unusual feeding behavior of nesting prairie falcons (Falco mexicanus) in southwestern Idaho. (in prep, will be submitted to Raptor Research).

Holthuijzen, A.M.A., P.A. Duley, J.C. Hagar, S.A. Smith, and K.N. Wood. 1985. Bathing behavior of nesting prairie falcons (Falco mexicanus) in southwestern Idaho. Wilson Bulletin (accepted for publication).

Reports

Holthuijzen, A.M.A. 1985. Behavior and productivity of nesting prairie falcons in relation to construction at Swan Falls Dam and Experimental Blasting. in K. Steenhof, ed. Snake River Birds of Prey Research Project Annual Report 1985. U.S. Dep. Int., Bur. Land Manage., Boise Distr., Boise, Idaho (in prep).

Holthuijzen, A.M.A. 1985. The effects of reconstruction activities at the Swan Falls hydroelectric power plant in southwestern Idaho on a breeding population of prairie Falcons Pages 76-120. in K. Steenhof, ed. Snake River Birds of Prey Research Project Annual Report 1984. U.S. Dep. Int., Bur. Land Manage., Boise Distr., Boise, Idaho. 145pp.

Popular Articles

Holthuijzen, A.M.A. 1986. The effects of construction activities at the Swan Falls hydro-electric power plant on nesting prairie falcons. Submitted 2/1/86 to Biocurrents.

Holthuijzen, A.M.A., and A.R. Ansell. 1985. Prairie falcons and resource development: conflict or coexistence? Will be submitted to Idaho Wildlife.

Technical Presentations in 1984-1986 Based on the Prairie Falcon Study

Presentation

Holthuijzen, A.M.A., A.R. Ansell, and M.N. Kochert. 1986. Behavior and productivity of nesting prairie falcons (Falco mexicanus) exposed to human disturbance activities. Annual Meeting of the Ecological Society of America. August 1986, State University of New York, Syracuse, New York.

Holthuijzen, A.M.A. 1986. The effects of construction activities at Swan Falls Dam and experimental blasting on nesting prairie falcons. Friends of Fish and Wildlife, March 1986, Boise, Idaho.

Holthuijzen, A.M.A., and W.G. Eastland. 1985. Responses of breeding prairie falcons (Falco mexicanus) to experimental blasting. Annual Meeting of the Idaho Chapter of the Wildlife Society. March 1986, Boise, Idaho. Holthuijzen, A.M.A., and W.G. Eastland. 1985. Responses of breeding prairie falcons (Falco mexicanus) to experimental blasting. Annual Meeting of the Raptor Research Foundation. November 1985, Sacramento, California.

Holthuijzen, A.M.A., and A.R. Ansell. 1985. The effects of construction activities at the Swan Falls Hydroelectric Power Plant in southwestern Idaho on a breeding population of prairie falcons (Falco mexicanus). Eleventh Annual Edison Electric Institute Power Biologists Meeting. September 1985, Clairmont, California.

Holthuijzen, A.M.A., A.R. Ansell, M.N. Kochert, K. Steenhof and L. Young. 1985. The effects of industrial construction activities on breeding prairie falcons (Falco mexicanus) in southwestern Idaho. Annual Meeting of the Idaho Chapter of the Wildlife Society, March 1985, Boise, Idaho.

Holthuijzen, A.M.A. 1985. The effect of human disturbance on the behavior of raptors: a preliminary review. Idaho Wildlife Workshop, Bureau of Land Management. February 1985, Boise, Idaho.

Holthuijzen, A.M.A., A.R. Ansell, M.N. Kochert, J.C. Smith, K. Steenhof and L. Young. 1985. The effects of industrial construction activities on breeding prairie falcons (Falco mexicanus) in southwestern Idaho. Issues and Technology in the Management of Impacted Western Wildlife, Thorne Ecological Institute. February 1985, Colorado Springs, Colorado.

Holthuijzen, A.M.A., A.R. Ansell, M.N. Kochert, K. Steenhof and L. Young. 1984. The effects of industrial construction activities on breeding prairie falcons (Falco mexicanus) in southwestern Idaho. Annual Meeting of the Raptor Research Foundation. October 1984, Blacksburg, Virginia.

Holthuijzen, A.M.A., and J.C. Smith. 1984. Breeding biology and behavior of prairie falcons (Falco mexicanus) in southwestern Idaho. Annual Meeting of the Raptor Research Foundation. October 1984, Blacksburg, Virginia.

Holthuijzen, A.M.A., and A.R. Ansell. 1984. The effects of construction activities at the Swan Falls Hydroelectric Power Plant in southwestern

Idaho on a breeding population of prairie falcons (Falco mexicanus).
Tenth Annual Edison Electric Institute Power Biologists Meeting. September
1984, Baltimore, Maryland.

Invited Lectures

Virginia Society of Ornithology, New River Bird Club. November 1985,
Blacksburg, Virginia. "Breeding biology of prairie falcons in the Snake
River Birds of Prey Area, southwestern Idaho".

Pacific Gas & Electric Co. Ecological Services Group Seminar Series,
November 1985, San Ramon, California. "Prairie falcons and resource
development: conflict or coexistence?"

